Indiana Department of Education

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K-2 Mathematics Resources to Extend and Enrich the Core Curriculum Appropriate for High Ability Students
Indiana Academic Standard Strand:
Measurement

Resource	Annotation	Differentiation Tip(s)	Correlating Indiana Academic Strand Standards	Correlating Indiana Academic Process Standards
AIMS Education Foundation (2007) ***Solve It! K-1: Problem Solving Strategies.*** Fresno, CA: AIMS Education Foundation. www.aimsedu.org (ISBN: 978-1-932093-14-8) *Also found in:* • *Data Analysis* • *Number Sense* • *Computation and Algebraic Thinking*	This resource includes 29 activities designed to introduce and develop the following eight problem solving strategies: • Guess and Check • Look for Patterns • Use Manipulatives • Draw Out the Problem • Use Logical Thinking • Write a Number Sentence • Work Backwards • Organize the Information Through involvement in the	***Tiered Delivery:*** The "Management" section of each activity provides specific suggestions on how to adjust the challenge level specific to that activity. ***Flexible Grouping:*** Arrange students in like-ability partners or small groups to work on problem solving activities. ***Self-Pacing:*** Allow individuals/partners/small	K.M.1 1.M.1	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8

• *Geometry*	activities, students apply grade-level academic strand content skills. This resource is ideal for math club use.	groups to work through the activities related to each problem solving strategy as fast and as far as they are able. Incorporate additional grade level AIMS Solve It! activities, as needed, for acceleration beyond the second grade level. (See "3-5 Mathematics Resources to Extend and Enrich the Core Curriculum Appropriate for High Ability Students")		
AIMS Education Foundation (2008) ***Solve It! 2nd: Problem Solving Strategies.*** Fresno, CA: AIMS Education Foundation. www.aimsedu.org (ISBN: 978-1-932093-15-5) *Also found in:* • *Data Analysis* • *Number Sense* • *Computation and Algebraic Thinking* • *Geometry*	This resource includes 28 activities designed to introduce and develop the following nine problem solving strategies: • Guess and Check • Look for Patterns • Use Manipulatives • Draw Out the Problem • Write a Number Sentence • Use Logical Thinking • Organize the Information • Work Backwards • Wish for an Easier Problem Through involvement in the activities, students apply grade-level academic strand content skills. This resource is ideal for	***Tiered Delivery:*** The "Management" section of each activity provides specific suggestions on how to adjust the challenge level specific to that activity. ***Flexible Grouping:*** Arrange students in like-ability partners or small groups to work on problem solving activities. ***Self-Pacing:*** Allow individuals/partners/small groups to work through the activities related to each problem solving strategy as fast and as far as	1.M.1; 1.M.2; 1.M.3 2.M.5; 2.M.7	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8

	math club use.	they are able. Incorporate additional grade level AIMS Solve It! activities, as needed, for acceleration beyond the second grade level. (See "3-5 Mathematics Resources to Extend and Enrich the Core Curriculum Appropriate for High Ability Students")		
Christensen, E. (2009) ***Coin Clues: Logic Puzzles that Reinforce Coin Values and Strengthen Math Skills (Level A)***. MindWare Holdings, Inc. www.mindware.com (ISBN: 978-1-933054-99-5) *Also found in:* • *Number Sense* • *Computation and Algebraic Thinking*	This reproducible book contains 108 "coin clues" puzzles. The object of each puzzle is to put coins in a line to match the clues. The puzzles use pennies, nickels, dimes, and quarters. The puzzles get progressively more challenging throughout the book and help students develop coin recognition, money sense, logic, sequencing, and reasoning skills. These puzzles are ideal for independent task time or for partner problem-solving. It is recommended that real coins be available for students to use in solving the puzzles.	***Tiered Delivery:*** Students needing less of a challenge can be assigned lower-numbered puzzles to solve, and students needing more of a challenge can be assigned higher-numbered puzzles to solve. ***Self-Pacing:*** All 108 puzzles can be stapled into a book and students can progress through the puzzles at their own pace. ***Choice:*** Provide students all puzzles (i.e., laminated copies) and allow them to choose which puzzles they would like to complete. Explain to students that the lower the	1.M.3 2.M.7	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8

		number, the easier the puzzle and the higher the number, the more difficult the puzzle.		
Cook, M. (2001) ***Money Logic***. Balboa Island, CA: Marcy Cook Math. www.marcycookmath.com *Also found in:* • *Number Sense* • *Computation and Algebraic Thinking*	This resource provides clues for students to listen to and/or read which challenge them to place coins in proper numerical positions. The resource is divided into sections where students use 3 designated coins, 4 designated coins, 5 designated coins, and 6 designated coins from a set of 12 coins total, up to 2 of each: penny, nickel, dime, quarter, half-dollar, and dollar. Students develop money sense and logical reasoning. These activities are ideal for independent task time, partner problem solving, or whole-class involvement. It is recommended that real coins be available for students to use in solving the activities.	***Tiered Delivery:*** Students needing less of a challenge can be assigned 3-coin challenges, and students needing more of a challenge can be assigned 4-, 5-, or 6-coin challenges.	1.M.3 2.M.7	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8
Cook, M. (2011) ***Scavenger Hunts for Primary Thinkers.*** Balboa Island,	This resource provides 30 activities in which students match 12 answers to 12 problems.	***Flexible Grouping:*** Assign like-ability partners to work through the Scavenger Hunts.	K.M.2 1.M.2;	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6;

CA: Marcy Cook Math. www.marcycookmath.com *Also found in:* • *Number Sense* • *Computation and Algebraic Thinking*	Students are required to do "double thinking" because the "answer" may be presented in a different way. Some solutions "have to be," and some have more than one possibility. The activities focus on the following concepts: • Right After • Right Before • More Than • Less Than • Between • Greater Than/Less Than • Numbers in the Real World • Addition Facts • Subtraction Facts • Money • Half of • 2-Digit Numbers/Place Value • Line Segments • Clocks: Time • Word Problems • Reasonable Numbers A tracking sheet is included. This resource is ideal for independent task time or partner problem solving.	***Self-Pacing:*** Individuals or like-ability partners can progress through the Scavenger Hunts at their own pace, keeping track of their progress and moving through the activities as far as they are able.	1.M.3 2.M.5; 2.M.6; 2.M.7	PS.7; PS.8

Cook, M. (1996) ***Skillboard Math.*** Balboa Island, CA: Marcy Cook Math. www.marcycookmath.com *Also found in:* • *Number Sense* • *Computation and Algebraic Thinking*	Student partners use verbal directives and tiles numbered 0-9 to match specified numbers with number representations on skillboards. At the end of each activity, one of the digits will not be requested and will be held high in the air. This resource provides for children an opportunity to see the numbers 0-9 represented in a variety of ways, which develops number sense, while also developing math vocabulary and cooperation. Partners should change skillboards between activities to see different number representations each time. The concepts developed include: • Before • After • Between • Before, After, Between Mix • More Than • Less Than • More Than/Less Than Mix • Place value: Tens Place • Place Value: Ones Place • Place Value: Ones and Tens Mixed	***Flexible Grouping:*** Assign like-ability partners to work on skillboard completion.	K.M.2 1.M.2; 1.M.3 2.M.5; 2.M.7	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8

	• Addition Facts • Subtraction Facts • Addition/Subtraction Facts Mixed • Even/Odd Numbers • Money • Time			
Dacey, L., et al (2003) ***Navigating through Measurement in Prekindergarten-Grade 2.*** Reston, VA: The National Council of Teachers of Mathematics, Inc. www.nctm.org (ISBN: 978-0-87353-5434)	This resource includes activities that introduce, develop, and extend the fundamental ideas of measurement. Activities are divided into the following chapters: • Comparing and Ordering • Using Units and Tools Blackline Masters are included.	***Tiered Delivery:*** Match the grade level resource most appropriate to the readiness level of students. For the third through sixth grade levels of this resource, see "3-5 Mathematics Resources to Extend and Enrich the Core Curriculum Appropriate for High Ability Students." ***Extend:*** This resource is appropriate for all students. See the "Extend" section of each activity for additional challenging activities appropriate for high ability math students.	K.M.1; K.M.2 1.M.1 2.M.1; 2.M.2	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8
Duea, J. and Ockenga, E. (1999) ***Nifty Problem Card Deck (Levels A-F)***.	This program offers six grade levels of problem-solving cards for K/1-6. Each level contains 72 task	***Flexible Grouping:*** Assign like-ability partners to work through the problem-solving cards.	K.M.1; K.M.2	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6;

Edmonds, WA: Joyful Noise Publications. www.shop.joyful-noise.com *Also found in:* • *Data Analysis* • *Number Sense* • *Computation and Algebraic Thinking* • *Geometry*	cards, recording sheets, answer keys, transparency masters, blackiline masters, and teaching notes. These cards are ideal for running a cooperative self-paced problem-solving program.	***Self-Pacing:*** Individuals or like-ability partners can progress through the cards in each level at their own pace, keeping track of their progress and moving through the cards as far as they are able.	1.M.2; 1.M.3	PS.7; PS.8
Equabeam. ETA hand2mind. www.hand2mind.com *Also found in:* • *Number Sense* • *Computation and Algebraic Thinking*	The Equabeam is a self-checking math balance that students can use to show operations, equalities, and inequalities. Additional strips with time increments and measurements, along with customizable strips allow for across-the strand equality activities. This resource is ideal for use during independent task time or partner problem solving.	***Extend:*** Adjust the level of challenge for any grade level by changing the number of weights and the number values used.	*1.M.3 *2.M.1; *2.M.6; *2.M.7 * Using measurement and customizable strips	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8
Gavin, M.K., et al (2012) ***(Project M2: Mentoring Young Mathematicians) Sizing Up the Lily Pad Space Station: Measuring***	In this supplemental measurement unit, students act as practicing mathematicians as they explore the attributes of length, area, and volume through	***Tiered Delivery:*** Utilize the unit's Hint Cards and Think Beyond Cards.	K.M.1	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8

with the Frogonauts: Level K. Dubuque, IA: Kendall Hunt Publishing Company. www.kendallhunt.com (ISBN: 978-0-7575-9946-0)	engaging, inquiry-based investigations. Throughout the unit, students work in whole-class activities, small-group space labs, and space centers with a partner. A Teacher Guide, Student Mathematician's Journal, Center Guide, Hint Cards, and Think Beyond Cards are available. The unit includes ideas for a culminating unit celebration. The unit is intended for kindergarten and takes approximately 33 60-minute sessions, or approximately 7 weeks to complete. Hint Cards support students who need more practice or additional instruction with skills or concepts, and Think Beyond Cards challenge students who have demonstrated mastery and are ready for an increased challenge.			
Gavin, M. K., et al (2011) ***(Project M2: Mentoring Young Mathematicians) Creating the School Measurement Fair: Measuring with Imi and Zani: Level 1.*** Dubuque, IA:	This first grade supplemental measurement unit ***Creating the School Measurement Fair: Measuring with Imi and Zani*** fits in with the *M2: Mentoring Young Mathematicians* measurement K-2	N/A	N/A	N/A

Kendall Hunt Publishing Company. www.kendallhunt.com	unit sequence. The first grade unit was unavailable for review.			
Gavin, M. K., et al (2011) ***(Project M2: Mentoring Young Mathematicians) Using Everyday Measures: Measuring With The Meerkats: Level 2.*** Dubuque, IA: Kendall Hunt Publishing Company. www.kendallhunt.com (ISBN: 978-0-7575-7179-4)	In this supplemental measurement unit, students act as practicing mathematicians as they explore the attributes of length, area, and capacity through engaging, inquiry-based investigations. Throughout the unit, students participate in whole-class, small group, partner, and individual activities. A Teacher Guide, Student Mathematician's Journal, Word Wall Cards, Hint Cards, and Think Beyond Cards are available. The unit includes ideas for a culminating unit celebration. The unit is intended for grade 2 and takes approximately 33.5 60-minute sessions, or approximately 7 weeks to complete. Hint Cards support students who need more practice or additional instruction with skills or concepts, and Think Beyond Cards challenge students who have demonstrated mastery	***Tiered Delivery:*** Utilize the unit's Hint Cards and Think Beyond Cards.	2.M.1; 2.M.2; 2.M.3; 2.M.4; *2.M.5; *2.M.7 * In the Grade 2 Review section included in the unit.	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8

	and are ready for an increased challenge.			
Tonneson, V.C. (2013) ***Splash! Modeling and Measurement Applications for Young Learners.*** Waco, TX: Prufrock Press, Inc. www.prufrock.com (ISBN: 13: 978-1-61821-015-9) *Also found in:* • *Geometry*	This resource is a unit intended for grades K and 1 consisting of 13 lessons that focus on linear measurement, fluid and flexible thinking, and the overarching concept of models. While involved in the unit, students explore and apply measurement skills as they work to design a community swimming pool.	N/A	K.M.1 1.M.1 2.M.1; 2.M.2; 2.M.3	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8
VandeCreek, B. (2001) ***Math Rules! 1st-2nd.*** Pieces of Learning: www.piecesoflearning.com. (ISBN: 978-1-880505-79-3) *Also found in:* • *Data Analysis* • *Number Sense* • *Computation and Algebraic Thinking* • *Geometry*	This reproducible resource provides a year's worth of weekly 8-problem enrichment challenge worksheets for both first and second grade. The variety of problems covers standards from all content strands. These worksheets are ideal for homework use.	***Tiered delivery:*** Match the grade level resource most appropriate to the readiness level of students. For the third through sixth grade levels of this resource, see "3-5 Mathematics Resources to Extend and Enrich the Core Curriculum Appropriate for High Ability Students."	K.M.1; K.M.2 1.M.1; 1.M.2; 1.M.3 2.M.1; 2.M.2; 2.M.5; 2.M.6; 2.M.7	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8

Zaccaro, Edward. (2003) ***Primary Grade Challenge Math.*** Bellevue, IA: Hickory Grove Press. www.challengemath.com (ISBN: 978-0-9679915-3-5) *Also found in:* • *Number Sense* • *Computation and Algebraic Thinking* • *Geometry*	This resource includes 27 higher-level conceptual problem-solving challenges. Each is presented first as a whole-class introduction, followed by practice problems at the following four levels of challenge: Level 1 (easy) Level 2 (somewhat challenging) Level 3 (challenging) Genius (very challenging) Problem challenge topics include: sequences, problem solving, money, percents, algebraic thinking, negative numbers, logic ratios, probability, measurements, fractions, and division. Most appropriate for first and/or second grade.	***Tiered Delivery:*** Following the whole-class introduction to a specific type of problem, students can complete the appropriately leveled follow-up challenge independently or with a like-ability partner, choosing from one of the four difficulty levels.	1.M.1; 1.M.3 2.M.1; 2.M.6; 2.M.7	PS.1; PS.2; PS.3; PS.4; PS.5; PS.6; PS.7; PS.8